IBM System x3750 M4 Intel Xeon processor-based, entry-level 4-socket server provides a balance of flexibility, price, and performance

Table of contents

1 Overview
2 Key prerequisites
2 Planned availability date
2 Description
4 Product positioning
5 Product number
6 Publications
7 Technical information
24 Pricing
26 Announcement countries

At a glance

The IBM® System x3750 M4 is a 2U, 4-socket server leveraging the Intel Xeon™ E5-4600 product family. The x3750 offers an innovative design with advanced flexibility and expandability. The x3750 M4 will be beneficial to high performance computing and medium-sized database clients looking for a cost-conscious solution that provides attractive price/performance for entry 4-socket workloads.

The x3750 M4 provides 2+2 socket design, flexible 5+3 PCI expansion, the ability to mix and match up to 16 2.5-inch or 32 1.8-inch IBM eXFlash SSD drives, integrated 10GbE networking with options for fiber or copper, IBM light path diagnostics with PFA, and world-class IBM service.

Warranty: Three years, customer replaceable unit (CRU) and on-site[1] service, limited warranty[2]; optional warranty service upgrades available.

Overview

The x3750 M4 is a 4-socket server featuring a streamlined design, optimized for price/performance, with advanced flexibility and expandability. The x3750 M4 provides innovative storage density, with flexible PCI and 10GbE networking options in a 2U form factor. It is powered with the latest 4-, 6-, and 8-core Intel Xeon E5-4600 series product family of processors.

Key features:

- Full support for Intel Xeon E5-4600 product family
- 4 sockets, 48 DIMM slots in a 2U form factor
- Solid1600 MHz RDIMM and LRDIMM performance
- 2+2 socket design for pay-as-you-grow expandability
- Mix-and-match internal storage with up to 16 HDD or 32 eXFlash drives

IBM is a registered trademark of International Business Machines Corporation

- Integrated 10GbE networking with a mezzanine option for fiber or copper interface
- Up to 8 PCIe I/O slots with a 5+3 design

Benefits and differentiators:

1. Pay-as-you-grow 2+2 design that allows you to consolidate existing 2-socket workloads and add additional processing resources as your business needs grow
2. Expandable PCIe 5+3 capability that gives you the option to increase PCIe slots through a 3 PCIe slot expansion riser
3. Storage density and IOP performance with up to 32 1.8-inch IBM eXFlash SSDs or 16 2.5-inch SAS/SATA HDDs
4. Integrated 10GbE with the option to select SFP+ fiber or 10BASE-T copper ports, allowing you to cost-effectively upgrade your 1GbE networking to 10GbE
5. A dense 2U form factor that efficiently uses less rack space and data center resources to reduce infrastructure costs
6. IBM light path diagnostics and PFA support
7. World-class IBM service, support, and financing options

[1] IBM sends a technician after attempting to diagnose and resolve the problem remotely.

[2]For information on the IBM Statement of Limited Warranty, contact your IBM representative or reseller. Copies are available upon request.

Key prerequisites

Refer to the Hardware requirements section for details.

Planned availability date

July 12, 2012

Description

Processors

- 4-socket SMP with Xeon EP 4S (E5-4600)
  - 2 sockets on the base planar
  - 2 sockets on the mezzanine card
- Xeon EP 4S - 4-, 6-, or 8-core processors supporting
  - 32nm architecture
  - Socket-R - 2011 pin LGA
  - EM64T
  - HyperThreading
  - Turbo Mode
  - Up to 20 MB L3 cache
  - 2 QPI links at up to 8 GT/s
  - Up to 40 PCIe Gen3 lanes per processor

Intel™ Patsburg Southbridge

- x4 DMI - Connection to processor 1 or 2

- 6 USB 2.0 ports
- SATA DVD ROM
- x1 PCIe Gen2 - Connection to IMM v2

Memory

- PC3-12800, registered, ECC, 240 pins up to 1600 Mb/s
- PC3-10600, registered, ECC, 240 pins up to 1333 Mb/s
- 4 GB, 8 GB, and 16 GB standard RDIMMs
- 16 GB and 32 GB LR-DIMMs
- Support for memory mirroring, memory sparing, and Chipkill (x4)
- Single DIMM isolation on uncorrectable error (Independent Channel Mode)
- 24 DIMM slots on the base planar
- 24 DIMM slots on the mezzanine card

I/O

- 5 x8 low-profile PCIe Gen3 slots
- 3 x8 FH/HL PCIe Gen3 slots on a riser
- x16 mechanical connectors
- Front and rear video
- Integrated Emulex BE3 that provides embedded dual-port 1Gb-T and dual-port 10Gb option, two SFP+ or two 10Gb-T
- Dedicated gigabit management port
- Serial port
- Integrated LSI 2208 SAS RAID with optional cache card socket
- Up to sixteen 2.5-inch drives, SAS/SATA/SSD or up to thirty-two 1.8-inch SSD drives
- x8 PCIe Gen3 connectivity

Powerand packaging

- 2U rack model
- One 1400W power supply connected to the main planar
  - Nonredundant
- One additional 1400W power supply connected through the mezzanine card or power interposer card
  - Provides redundancy for "sweet spot" system configurations
  - Fully loaded system will experience power capping / throttling
- Six redundant counter-rotating hot-swap fans
- Up to 32 1.8-inch SSD drives
- Up to 16 2.5-inch SAS/SATA/SSD drives
- Pull-out light path diagnostics panel

IBM System x3750 M4 model configurations

System SEO number	Processor	Cache	Memory	HDD iface	HDD	Power supply
8722-A1G	2 x 2.90 GHz Xeon E5-4617 6 core 130w	15 MB	2x8 GB with CPU-Memory Expansion Mezzanine	SAS/SATAx4	Open bay 1x1400W	
8722-A3G	2 x 2.20 GHz Xeon E7-4607 6 core 95w	12 MB	2x8 GB with CPU-Memory Expansion Mezzanine	SAS/SATAx4	Open bay 1x1400W	
8722-B1G	2 x 2.40 GHz	15 MB	2x8 GB	SAS/SATAx4	Open bay 1x1400W	

```
           Xeon E5-4610       with CPU-Memory Expansion Mezzanine
             6 core 95w
8722-B2G   2 x 2.20 GHz   16 MB  2x8 GB  SAS/SATAx4  Open bay 1x1400W
           Xeon E5-4620       with CPU-Memory Expansion Mezzanine
             8 core 95w
8722-C1G   2 x 2.40 GHz   20 MB  2x8 GB  SAS/SATAx4  Open bay 1x1400W
           Xeon E5-4640       with CPU-Memory Expansion Mezzanine
             8 core 95w
8722-C2G   2 x 2.70 GHz   20 MB  2x8 GB  SAS/SATAx4  Open bay 1x1400W
           Xeon E5-4650       with CPU-Memory Expansion Mezzanine
             8 core 130w
8722-D1G   4 x 2.40 GHz   15 MB 24x8 GB  Two SSDx4   16x200GB 1x1400W
           Xeon E5-4610                               1.8" SSD
             6 core 95w     with CPU-Memory Expansion Mezzanine
                               12x8 GB on Riser
8722-D2G   4 x 2.70 GHz  20 MB 24x16 GB  Four SSDx4  32x200GB 1x1400W
           Xeon E5-4650                               1.8" SSD
            8 core 130w     with CPU-Memory Expansion Mezzanine
                               12x16 GB on Riser
```

Product positioning

These new IBM System x3750 M4 models enhance the server line by providing new levels of performance and price/performance.

The IBM System x3750 M4 servers provide excellent scalable processing capability supporting high-speed memory, PCIe bus architecture, and 4-, 6-, and 8-core Intel Xeon processors.

This makes the IBM System x3750 M4 servers an excellent fit for current and future enterprise on-demand applications.

These high-density, Intel Xeon-based servers are designed to handle complex applications requiring high-speed computing power, advanced high-availability functions, and a minimum amount of rack space.

Applications include:

- On-demand business
- Business intelligence
- Transaction processing
- Enterprise resource planning
- Collaboration applications (Microsoft™ Exchange and Lotus Notes®)
- Server consolidation and virtualization
- Internet or intranet front-end serving
- Web content serving
- Database storage as a SAN solution
- In-memory databases

Reference information

For information on ServicePacs, refer to Hardware Announcement ZG06-0710, dated September 19, 2006 .

Product number

MTM starting point models

Description	Machine	Model	Part number
IBM System x3750 M4	8722	FT1	8722FT1

Description	Machine	Model	Part number
IBM System x3750 M4			
	8722	A1G	8722A1G
	8722	A2G	8722A2G
	8722	A3G	8722A3G
	8722	B1G	8722B1G
	8722	B2G	8722B2G
	8722	C1G	8722C1G
	8722	C2G	8722C2G
	8722	D1G	8722D1G
	8722	D2G	8722D2G

Options part numbers

Description	Part number
CPU-Memory Expansion Mezzanine (2-CPU / 24-DIMM)	88Y7365
Power Interposer	88Y7367
(3x8) PCIe Riser	88Y7371
Dual Port 10GB-T Ethernet Daughter Card	88Y7427
Dual Port 10GB SPF+ Ethernet Daughter Card	88Y7429
1400W Power Supply	88Y7373
900W Power Supply	88Y7431
IBM 4x 2.5" HS SAS/SATA/SSD HDD Backplane	88Y7418
IBM 8x 2.5" HS SAS/SATA/SSD HDD Backplane	88Y7419
IBM 8x 2.5" HS SAS/SATA/SSD HDD Backplane with controller expansion	88Y7421
1.8" 16 SSD Backplane	88Y7422
4U Slides Kit for Threaded Hole Rack and CMA	88Y5872
Intel Xeon Processor E5-4650 8C 2.7GHz 20MB Cache 1600MHz 130W	88Y7324
Intel Xeon Processor E5-4620 8C 2.2GHz 16MB Cache 1333MHz 95W	88Y7330
Intel Xeon Processor E5-4610 6C 2.4GHz 15MB Cache 1333MHz 95W	88Y7336
Intel Xeon Processor E5-4607 6C 2.2GHz 12MB Cache 1066MHz 95W	88Y7342
Intel Xeon Processor E5-4640 8C 2.4GHz 20MB Cache 1600MHz 95W	88Y7348
Intel Xeon Processor E5-4617 6C 2.9GHz 15MB Cache 1600MHz 130W	88Y7354
Intel Xeon Processor E5-4603 4C 2.0GHz 10MB Cache 1066MHz 95W	88Y7446
Intel Xeon Processor E5-4650L 8C 2.6GHz 20MB Cache 1600MHz 115W	88Y7458

Pseudo options

The following pseudo parts numbers cannot be ordered as stand-alone parts and can be ordered only as part of a configuration.

Description	Part number
ServeRAID C105 for IBM System x® Placement	59Y8188
ServeRAID M5110 SAS/SATA Controller Placement	59Y8189

Lightpath Upgrade kit	00D2899
x3750 M4 Bezel	88Y7460
Power Supply Blank Filler	88Y7475
CPU-Mem Card Filler	88Y7477
PCIe Riser Rear Bulkhead Filler	88Y7479
Mfg Code	88Y7481
Labels GBM	88Y7483
Rating label for 1400W PS	88Y7485
Rating label for 900W PS	88Y7424
Short SAS cable to planar	88Y7435
Long SAS cable to planar	88Y7437
Short SAS cable to PCIe controller	88Y7441
Long SAS cable to PCIe controller	88Y7443
CPU Baffle Installed	88Y7369
CPU Baffle Packaged	88Y7375
x3750 M4 CPU Planar	88Y7362
System Packaging - WW	88Y7387
Intel Xeon Processor E5-4650 8C 2.7GHz 20MB Cache 1600MHz 130W	88Y7326
Intel Xeon Processor E5-4620 8C 2.2GHz 16MB Cache 1333MHz 95W	88Y7332
Intel Xeon Processor E5-4610 6C 2.4GHz 15MB Cache 1333MHz 95W	88Y7338
Intel Xeon Processor E5-4607 6C 2.2GHz 12MB Cache 1066MHz 95W	88Y7344
Intel Xeon Processor E5-4640 8C 2.4GHz 20MB Cache 1600MHz 95W	88Y7350
Intel Xeon Processor E5-4617 6C 2.9GHz 15MB Cache 1600MHz 130W	88Y7356
Intel Xeon Processor E5-4603 4C 2.0GHz 10MB Cache 1066MHz 95W	88Y7448
Intel Xeon Processor E5-4650L 8C 2.6GHz 20MB Cache 1600MHz 115W	88Y7360

Description	Part number
System Documentation and Software-UK English	88Y7405
System Documentation and Software-French	88Y7407
System Documentation and Software-Spanish	88Y7409
System Documentation and Software-German	88Y7411
System Documentation and Software-Italian	88Y7413

Publications

The *IBM System x3750 M4 Types 8722 and 8733 Installation and Service Guide,* in US English, is available from

http://www.ibm.com/systems/support

It contains an introduction to the computer, installation and setup, installing options, reference information, and problem determination. The installation guide has easy-to-use text and illustrations to enable you to quickly set up your x3750 M4 servers.

IBM Systems Director systems-management software is included.

Note: Software versions, features, and functions shipped with these systems may change as new releases become available or may be discontinued at any time.

IBM Publications Center Portal

http://www.ibm.com/shop/publications/order

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided, as well as payment options via credit card. A large number of publications are available online in various file formats, which can currently be downloaded free of charge.

Services

Global Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an on-demand business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or visit

http://www.ibm.com/services/

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

http://www.ibm.com/services/continuity

For details on education offerings related to specific products, visit

http://www.ibm.com/services/learning/index.html

Select your country, and then select the product as the category.

Technical information

Specified operating environment

Physical specifications

x3750 M4

EMEA x=G

	8722A2x
Processor	Xeon E5-4603
Four-core	95w
Internal speed	2.0 GHz
Memory bus speed	1066 MHz
Number standard	1
Maximum	2
Interconnect speed	6.4 GT/s
L3 cache total	10 MB
Memory	8 GB ECC
DIMMs	1 x 8 GB RDIMM
DIMM sockets maximum	24
Capacity	1536 GB [3]
Memory / Processor expansion card	
Number standard	0
Maximum	1
Processors standard	0
Processor sockets maximum	2
DIMMs	0
DIMM sockets maximum	24
Video	SVGA
Memory	16 MB
SAS controller	
Ports	8
Connector internal	2
Connector external	0
HDD standard	0

Bays available	16 - 2.5-inch or 32 1.8-inch Standard
2.5-inch slim	16 Optional
1.8-inch eXFlash SSD	32 Optional
Hot-swap	Standard
Internal capacity	16 TB [4]
PCIe sockets	5 Standard
Management processor IMM	Standard
RAID 0/1	Standard
RAID 5 (cacheless)	Optional
RAID 5 (512MB Cache) + battery	Optional
RAID 5 (512MB Flash)	Optional
RAID 5 (1 GB Flash)	Optional
PCIe 3 slot expansion riser	Optional
10GB SFP+ Mezzanine Card	Optional
10GBaseT Mezzanine Card	Optional
SSD Performance Key	Optional
1U Cable Management Arm	Standard
2U Cable Management Arm	Optional
2.5" HDD PCIe Controller	Optional
1.8" SSD PCIe Controller	Optional
Dual 1 GigE (Onboard)	Standard
VMware ESXi Hypervisor USB Key	Optional
Fusion I/O Duo (320 GB)	Optional
Power supply	1400 W
Number standard	1
Maximum	2
Hot-swap	Yes
Redundant power	Optional
Auto-restart	Yes
Hot-swap	Yes

	8722A1x
Processor	Xeon E5-4617
Six-core	130W
Internal speed	2.90 GHz
Memory bus speed	1600 MHz
Number standard	2
Maximum	2
Interconnect speed	7.2 GT/s
L3 cache total	15 MB
Memory	16 GB ECC RDIMM
DIMMs	2 x 8 GB
DIMM sockets maximum	24
Capacity	1536 GB [3]
Memory / Processor expansion card	
Number standard	1
Maximum	1
Processors standard	0
Processor sockets maximum	2
DIMMs	0
DIMM sockets maximum	24
Video	SVGA
Memory	16 MB
SAS controller	
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	16 - 2.5-inch or 32 1.8-inch Standard
2.5-inch slim	4 Standard
1.8-inch eXFlash SSD	32 Optional
Hot-swap	Standard
Internal capacity	16 TB [4]
PCIe sockets	5 Standard
Management processor IMM	Standard
RAID 0/1	Standard
RAID 5 (cacheless)	Optional
RAID 5 (512MB Cache) + battery	Optional
RAID 5 (512MB Flash)	Optional
RAID 5 (1 GB Flash)	Optional

PCIe 3 slot expansion riser	Optional
10GB SFP+ Mezzanine Card	Optional
10GBaseT Mezzanine Card	Optional
SSD Performance Key	Optional
1U Cable Management Arm	Optional
2U Cable Management Arm	Standard
2.5" HDD PCIe Controller	Optional
1.8" SSD PCIe Controller	Optional
Dual 1 GigE (Onboard)	Standard
VMware ESXi Hypervisor USB Key	Optional
Fusion I/O Duo (320 GB)	Optional
Power supply	1400 W
Number standard	1
Maximum	2
Hot-swap	Yes
Redundant power	Optional
Auto-restart	Yes
Hot-swap	Yes

	8722A3x
Processor	Xeon E5-4607
Six-core	95W
Internal speed	2.20 GHz
Memory bus speed	1066 MHz
Number standard	2
Maximum	2
Interconnect speed	6.4 GT/s
L3 cache total	12 MB
Memory	16 GB ECC RDIMM
DIMMs	2 x 8 GB
DIMM sockets maximum	24
Capacity	1536 GB [3]
Memory / Processor expansion card	
Number standard	1
Maximum	1
Processors standard	0
Processor sockets maximum	2
DIMMs	0
DIMM sockets maximum	24
Video	SVGA
Memory	16 MB
SAS controller	
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	16 - 2.5-inch or 32 1.8-inch Standard
2.5-inch slim	4 Standard
1.8-inch eXFlash SSD	32 Optional
Hot-swap	Standard
Internal capacity	16 TB [4]
PCIe sockets	5 Standard
Management processor IMM	Standard
RAID 0/1	Standard
RAID 5 (cacheless)	Optional
RAID 5 (512MB Cache)	
+ battery	Optional
RAID 5 (512MB Flash)	Optional
RAID 5 (1 GB Flash)	Optional
PCIe 3 slot expansion riser	Optional
10GB SFP+ Mezzanine Card	Optional
10GBaseT Mezzanine Card	Optional
SSD Performance Key	Optional
1U Cable Management Arm	Optional
2U Cable Management Arm	Standard
2.5" HDD PCIe Controller	Optional
1.8" SSD PCIe Controller	Optional
Dual 1 GigE (Onboard)	Standard
VMware ESXi Hypervisor USB Key	Optional
Fusion I/O Duo (320 GB)	Optional
Power supply	1400 W
Number standard	1

Maximum	2
Hot-swap	Yes
Redundant power	Optional
Auto-restart	Yes
Hot-swap	Yes

	8722B1x
Processor	Xeon E5-4610
Six-core	95W
Internal speed	2.40 GHz
Memory bus speed	1333 MHz
Number standard	2
Maximum	2
Interconnect speed	7.2 GT/s
L3 cache total	15 MB
Memory	16 GB ECC
DIMMs	2 x 8 GB RDIMM
DIMM sockets maximum	24
Capacity	1536 GB [3]
Memory / Processor expansion card	
Number standard	1
Maximum	1
Processors standard	0
Processor sockets maximum	2
DIMMs	0
DIMM sockets maximum	24
Video	SVGA
Memory	16 MB
SAS controller	
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	16 - 2.5-inch or 32 1.8-inch Standard
2.5-inch slim	4 Standard
1.8-inch eXFlash SSD	32 Optional
Hot-swap	Standard
Internal capacity	16 TB [4]
PCIe sockets	5 Standard
Management processor IMM	Standard
RAID 0/1	Standard
RAID 5 (cacheless)	Optional
RAID 5 (512MB Cache) + battery	Optional
RAID 5 (512MB Flash)	Optional
RAID 5 (1 GB Flash)	Optional
PCIe 3 slot expansion riser	Optional
10GB SFP+ Mezzanine Card	Optional
10GBaseT Mezzanine Card	Optional
SSD Performance Key	Optional
1U Cable Management Arm	Optional
2U Cable Management Arm	Standard
2.5" HDD PCIe Controller	Optional
1.8" SSD PCIe Controller	Optional
Dual 1 GigE (Onboard)	Standard
VMware ESXi Hypervisor USB Key	Optional
Fusion I/O Duo (320 GB)	Optional
Power supply	1400 W
Number standard	1
Maximum	2
Hot-swap	Yes
Redundant power	Optional
Auto-restart	Yes
Hot-swap	Yes

	8722B2x
Processor	Xeon E5-4620
Eight-core	95W
Internal speed	2.20 GHz
Memory bus speed	1333 MHz
Number standard	2

Maximum	2
Interconnect speed	7.2 GT/s
L3 cache total	16 MB
Memory	16 GB ECC
DIMMs	2 x 8 GB RDIMM
DIMM sockets maximum	24
Capacity	1536 GB [3]
Memory / Processor expansion card	
Number standard	1
Maximum	1
Processors standard	0
Processor sockets maximum	2
DIMMs	0
DIMM sockets maximum	24
Video	SVGA
Memory	16 MB
SAS controller	
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	16 - 2.5-inch or 32 1.8-inch Standard
2.5-inch slim	16 Optional
1.8-inch eXFlash SSD	8 Standard
Hot-swap	Standard
Internal capacity	16 TB [4]
PCIe sockets	8 Standard
PCIe 3 slot expansion riser	Standard
Management processor IMM	Standard
RAID 0/1	Standard
RAID 5 (cacheless)	Optional
RAID 5 (512MB Cache) + battery	Optional
RAID 5 (512MB Flash)	Optional
RAID 5 (1 GB Flash)	Optional
10GB SFP+ Mezzanine Card	Optional
10GBaseT Mezzanine Card	Optional
SSD Performance Key	Optional
1U Cable Management Arm	Optional
2U Cable Management Arm	Standard
2.5" HDD PCIe Controller	Optional
1.8" SSD PCIe Controller	Optional
Dual 1 GigE (Onboard)	Standard
VMware ESXi Hypervisor USB Key	Optional
Fusion I/O Duo (320 GB)	Optional
Power supply	1400 W
Number standard	1
Maximum	2
Hot-swap	Yes
Redundant power	Optional
Auto-restart	Yes
Hot-swap	Yes

	8722C1x
Processor	Xeon E5-4640
Eight-core	95W
Internal speed	2.40 GHz
Memory bus speed	1600 MHz
Number standard	2
Maximum	2
Interconnect speed	8.0 GT/s
L3 cache total	20 MB
Memory	16 GB ECC
DIMMs	2 x 8 GB RDIMM
DIMM sockets maximum	24
Capacity	1536 GB [3]
Memory / Processor expansion card	
Number standard	1
Maximum	1
Processors standard	0
Processor sockets maximum	2
DIMMs	0

DIMM sockets maximum	24
Video	SVGA
Memory	16 MB
SAS controller	
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	16 - 2.5-inch or 32 1.8-inch Standard
2.5-inch slim	4 Standard
1.8-inch eXFlash SSD	32 Optional
Hot-swap	Standard
Internal capacity	16 TB [4]
PCIe sockets	8 Standard
PCIe 3 slot expansion riser	Standard
Management processor IMM	Standard
RAID 0/1	Standard
RAID 5 (cacheless)	Optional
RAID 5 (512MB Cache) + battery	Optional
RAID 5 (512MB Flash)	Optional
RAID 5 (1 GB Flash)	Standard
10GB SFP+ Mezzanine Card	Optional
10GBaseT Mezzanine Card	Optional
SSD Performance Key	Optional
1U Cable Management Arm	Optional
2U Cable Management Arm	Standard
2.5" HDD PCIe Controller	Optional
1.8" SSD PCIe Controller	Optional
Dual 1 GigE (Onboard)	Standard
VMware ESXi Hypervisor USB Key	Optional
Fusion I/O Duo (320 GB)	Optional
Power supply	1400 W
Number standard	1
Maximum	2
Hot-swap	Yes
Redundant power	Optional
Auto-restart	Yes
Hot-swap	Yes

	8722C2x
Processor	Xeon E5-4650
Eight-core	130W
Internal speed	2.70 GHz
Memory bus speed	1600 MHz
Number standard	2
Maximum	2
Interconnect speed	8.0 GT/s
L3 cache total	20 MB
Memory	16 GB ECC
DIMMs	2 x 8 GB RDIMM
DIMM sockets maximum	24
Capacity	1536 GB [3]
Memory / Processor expansion card	
Number standard	1
Maximum	1
Processors standard	0
Processor sockets maximum	2
DIMMs	0
DIMM sockets maximum	24
Video	SVGA
Memory	16 MB
SAS controller	
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	16 - 2.5-inch or 32 1.8-inch Standard
2.5-inch slim	4 Standard
1.8-inch eXFlash SSD	32 Optional
Hot-swap	Standard
Internal capacity	16 TB [4]

PCIe sockets	8 Standard
PCIe 3 slot expansion riser	Standard
Management processor IMM	Standard
RAID 0/1	Standard
RAID 5 (cacheless)	Optional
RAID 5 (512MB Cache) + battery	Optional
RAID 5 (512MB Flash)	Optional
RAID 5 (1 GB Flash)	Standard
10GB SFP+ Mezzanine Card	Optional
10GBaseT Mezzanine Card	Optional
SSD Performance Key	Optional
1U Cable Management Arm	Optional
2U Cable Management Arm	Standard
2.5" HDD PCIe Controller	Optional
1.8" SSD PCIe Controller	Optional
Dual 1 GigE (Onboard)	Standard
VMware ESXi Hypervisor USB Key	Optional
Fusion I/O Duo (320 GB)	Optional
Power supply	1400 W
Number standard	1
Maximum	2
Hot-swap	Yes
Redundant power	Optional
Auto-restart	Yes
Hot-swap	Yes

	8722D1x
Processor	Xeon E5-4610
Six-core	95W
Internal speed	2.40 GHz
Memory bus speed	1333 MHz
Number standard	2
Maximum	2
Interconnect speed	7.2 GT/s
L3 cache total	15 MB
Memory	192 GB ECC
DIMMs	12 x 8 GB RDIMM
DIMM sockets maximum	24
Capacity	1536 GB [3]
Memory / Processor expansion card	
Number standard	1
Maximum	1
Processors standard	2
Processor sockets maximum	2
DIMMs	12 x 8 GB RDIMM
DIMM sockets maximum	24
Video	SVGA
Memory	16 MB
SAS controller	
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
SSD standard	16
Capacity	200 GB
Bays available	16 - 2.5-inch or 32 1.8-inch Standard
2.5-inch slim	16 Optional
1.8-inch eXFlash SSD	16 Standard
Hot-swap	Standard
Internal capacity	16 TB [4]
PCIe sockets	8 Standard
PCIe 3 slot expansion riser	Standard
Management processor IMM	Standard
RAID 0/1	Standard
RAID 5 (cacheless)	Optional
RAID 5 (512MB Cache) + battery	Optional
RAID 5 (512MB Flash)	Optional
RAID 5 (1 GB Flash)	Optional
10GB SFP+ Mezzanine Card	Optional
10GBaseT Mezzanine Card	Optional

SSD Performance Key	Standard
1U Cable Management Arm	Optional
2U Cable Management Arm	Standard
2.5" HDD PCIe Controller	Optional
1.8" SSD PCIe Controller	Optional
Dual 1 GigE (Onboard)	Standard
VMware ESXi Hypervisor USB Key	Optional
Fusion I/O Duo (320 GB)	Optional
Power supply	1400 W
Number standard	2
Maximum	2
Hot-swap	Yes
Redundant power	Standard
Auto-restart	Yes
Hot-swap	Yes

	8722D2x
Processor	Xeon E5-4650
Eight-core	130W
Internal speed	2.70 GHz
Memory bus speed	1600 MHz
Number standard	2
Maximum	2
Interconnect speed	8.0 GT/s
L3 cache total	20 MB
Memory	384 GB ECC
DIMMs	12 x 16 GB LRDIMM
DIMM sockets maximum	24
Capacity	1536 GB [3]
Memory / Processor expansion card	
Number standard	1
Maximum	1
Processors standard	0
Processor sockets maximum	2
DIMMs	12 x 16 GB LRDIMM
DIMM sockets maximum	24
Video	SVGA
Memory	16 MB
SAS controller	
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
SSD standard	32
Capacity	200 GB
Bays available	16 - 2.5-inch or 32 1.8-inch Standard
1.8-inch eXFlash SSD	32 Standard
Hot-swap	Standard
Internal capacity	16 TB [4]
PCIe sockets	8 Standard
PCIe 3 slot expansion riser	Standard
Management processor IMM	Standard
RAID 0/1	Standard
RAID 5 (cacheless)	Optional
RAID 5 (512MB Cache) + battery	Optional
RAID 5 (512MB Flash)	Optional
RAID 5 (1 GB Flash)	Optional
10GB SFP+ Mezzanine Card	Optional
10GBaseT Mezzanine Card	Optional
SSD Performance Key	Standard
1U Cable Management Arm	Optional
2U Cable Management Arm	Standard
2.5" HDD PCIe Controller	Optional
1.8" SSD PCIe Controller	Optional
Dual 1 GigE (Onboard)	Standard
VMware ESXi Hypervisor USB Key	Optional
Fusion I/O Duo (320 GB)	Optional
Power supply	1400 W
Number standard	2
Maximum	2
Hot-swap	Yes

Redundant power	Standard
Auto-restart	Yes
Hot-swap	Yes

[3]Capacities are based on installation of the riser card and twenty-four 32 GB DIMMs installed on the card.

[4]Capacities are based on installation of sixteen 1 TB 2.5-inch SFF SATA HDDs. For the latest information on supported HDD options, visit

http://www-03.ibm.com/servers/eserver/serverproven/compat/us/indexsp.html

The IMM video resolutions on System x3750 M4 are:

Resolution	Maximum refresh rate supported	bpp
640 x 400	60, 72, 75, 85	8, 16, 32
800 x 600	60, 72, 75, 85	8, 16, 32
1024 x 768	60, 72, 75, 85	8, 16, 32
1280 x 1024	60, 75	8, 16, 32
1440 x 900	60, 60, RB	8, 16, 32
1600 x 1200	60, 75	8, 16, 32
1680 x 1050	60, 60, RB	8, 16, 32

Note: Each resolution supports both CRT and flat panel monitors. For monitors, each resolution complies with CRT ISO 9241.3.

- 1440 x 900 and 1680 x 1050 are typically wide screen flat panel (non-CRT) settings so they are available only at 60 Hz.
- 1440 x 900 and 1680 x 1050 are available at 60 Hz with support for 60 Hz Reduced Blanking Mode.

Dimensions

Rack drawer

- Width: 445.6 mm (17.54 in.)

System Chassis

- Depth: 734.1 mm (28.90 in.)
- Height: 86.5 mm (3.41 in.)
- Depth - Back of EIA Flange to Rear of System: 702.5 mm (27.66 in.)
- Approximate Weight - Fully Configured: 31.07 kg (68.5 lb)

Electrical

- 100 to 127 (nominal) V ac; 50 Hz or 60 Hz; System 20A (10A/PS)
- 200 to 208 (nominal) V ac; 50 Hz or 60 Hz; System 10A
- 200 to 240 (nominal) V ac; 50 Hz or 60 Hz; System 9A
  - Minimum configuration: 0.20 kVA (one power supply)
  - Minimum configuration: 0.26 kVA (two power supplies)
  - Typical configuration: 1.12 kVA (two power supplies)
  - Maximum configuration: 2.16 kVA (two power supplies)
- Btu output:
  - Ship configuration (1PS): 648 Btu/hr (190 watts)
  - Ship configuration (2PS): 802 Btu/hr (235 watts)
  - Typical configuration: 3,753 Btu/hr (1100 watts)
  - Full configuration: 7,336 Btu/hr (2150 watts)
- Noise level horizontal position: 6.3 bels

Note: The noise emission level stated is the declared (upper limit) sound power level, in bels, for a random sample of machines. All measurements made in accordance with ISO 7779 and reported in conformance with ISO 9296.

Standards

x3750 M4 servers are intended for use as rack-drawer servers and are tested and designed to operate in a horizontal position.

These systems support or comply with the following standards:

- Multiprocessor Specification (MPS) 1.4
- Hardware-enabled to meet ISO 9241, Part 3

In addition to the above standards, they are compatible with the PCIe specification.

Equipment approvals and safety

- CE Mark (EN55022 Class A, EN60950, and EN55024)
- CISPR 22, Class A
- TUV-GS (EN60950-1:2001, 2nd edition)
- FCC - Verified to comply with Part 15 of the FCC Rules (Class A) prior to product delivery
- IEC-60950-1, 2nd edition (CB Certificate and CB Test Report)

Operating environment

- Temperature:
  - 10.0° to 35.0°C (50° to 95°F) at 0 to 914 m (0 to 3,000 ft)
  - 10.0° to 32.0°C (50° to 90°F) at 914 to 2,133 m (3,000 to 7,000 ft)
- Relative humidity: 8% to 80%

Hardware requirements

For attended installation of an operating system, this server requires a compatible:

- Keyboard
- Mouse
- Display

Unattended or remote installation may be performed without requiring some or all of these components. Review your unattended software installation program information for specific hardware configuration requirements.

For service, the servers require a compatible:

- Keyboard
- Mouse
- Display

When having the unit serviced, plan to have these components attached to your server either directly or indirectly via a console switch.

Software requirements

The following network operating systems have been tested for compatibility with the x3750 M4 server.

Clustering OS

- Microsoft Windows™ HPC Server 2008 R2

Network operating systems

- Microsoft
  - Windows Server 2008 R2 x64
  - Windows Server 2008 Datacenter x64
  - Windows Server 2008 Enterprise x64
  - Windows HPC Server 2008
  - Windows Server 2008 Standard x64
  - Windows Web Server 2008 x64
  - Windows SBS 2008 PE x64
  - Windows SBS 2008 SE x64
- Linux™
  - Red Hat Enterprise Linux 5 Server x64 Edition
  - Red Hat Enterprise Linux 5 Server with Xen x64 Edition
  - Red Hat Enterprise Linux 6 Server x64 Edition
  - SUSE Linux Enterprise Server 10 for AMD64/EM64T
  - SUSE Linux Enterprise Server 10 with Xen for AMD64/EM64T
  - SUSE Linux Enterprise Server 11 for AMD64/EM64T
  - SUSE Linux Enterprise Server 11 with Xen for AMD64/EM64T
- Other
  - VMware ESX 4.1
  - VMware ESXi 4.1
  - VMware vSphere 5
  - VMware vSphere Hypervisor 4.1 U1

Note: For information on additional support, certification, and versions of network operating systems, visit

http://www.ibm.com/servers/eserver/serverproven/compat/us/

IBM makes no representation or warranty regarding third-party products, including those designated as ServerProven® .

Compatibility

The IBM System x3750 M4 servers contain licensed system programs that include set configuration, set features, and test programs. IBM system BIOS is loaded from a "flash" EEPROM into system memory. This BIOS provides instructions and interfaces designed to support the standard features of the IBM System x3750 M4 servers and to maintain compatibility with many current software programs.

For detailed information about IBM and non-IBM devices, adapters, software, and network operating systems supported with IBM System x3550 M4 servers, visit

http://www-03.ibm.com/servers/eserver/serverproven/compat/us/indexsp.html

Contact your IBM representative or IBM Business Partner, or refer to the *IBM Sales Manual* for information on the compatibility of hardware and software for IBM System x3750 M4 servers. The *Sales Manual* is updated periodically as new features and options are announced that support these servers.

Limitations

Memory: All supported system memory is addressable through direct memory access (DMA). This server supports 4 GB, 8 GB, 16 GB, and 32 GB 1.5 V or 1.35 V, 240-pin, PC3-10600 ECC DDR3 SDRAM RDIMMs and LRDIMMs. Supported DIMMs can coexist in the same server; however, memory DIMMs of the same capacity must

be installed in matched pairs. Refer to the Planning information section or the IBM System x3750 M4 server web page for memory options.

The x3750 M4 servers have RAID 0 and 1 standard via the M5110e SAS/SATA Controller integrated on the board. The ServeRAID M5015 SAS/SATA Controller or Feature-on-Demand RAID upgrades provide additional RAID levels.

SolidState Memory cells have an intrinsic, finite number of write cycles that each cell can incur. As a result each solid state device has a maximum amount of write cycles it can be subjected to, documented as TBW (Total Bytes Written). IBM is not responsible for replacement of hardware that has reached the maximum guaranteed number of write cycles. This limit may be revealed as the device failing to respond to system-generated commands or becoming incapable of being written to.

ServerGuide: Use the version of *ServerGuide* available on the web to load software and drivers. Earlier versions of *ServerGuide* may not be compatible with the servers.

Planning information

Customer responsibilities

x3750 M4 server and related options

The x3750 M4 servers are designated as customer setup. Customer setup instructions are shipped with the systems.

Configuration information

Bay configuration

The x3750 M4 servers contain sixteen customer-accessible drive bays on the front of the server. A lower left bay is for the slim combo drive. Sixteen unpopulated 2.5-inch, slim-high, hot-swap drive bays are located beneath this bay.

The UltraSlim Enhanced SATA CD-RW / DVD-ROM Combo drive is cabled directly to the SATA port.

Internal SCSI cabling

Models of the x3750 M4 servers contain a DASD backplane supporting four hot-swap, SCA-2-compliant drive bays.The x3750 M4 models with the M5110e SAS/SATA Controller integrated on the board supportRAID 0 and 1 standard.Feature-on-Demand RAID upgrades provide additional RAID levels.

Processor upgrade

The following processor upgrade options are supported:

- Intel Xeon Processor E5-4650 8C 2.7GHz 20MB Cache 1600MHz 130W (88Y7324)
- Intel Xeon Processor E5-4620 8C 2.2GHz 16MB Cache 1333MHz 95W (88Y7330)
- Intel Xeon Processor E5-4610 6C 2.4GHz 15MB Cache 1333MHz 95W (88Y7336)
- Intel Xeon Processor E5-4607 6C 2.2GHz 12MB Cache 1066MHz 95W (88Y7342)
- Intel Xeon Processor E5-4640 8C 2.4GHz 20MB Cache 1600MHz 95W (88Y7348)
- Intel Xeon Processor E5-4617 6C 2.9GHz 15MB Cache 1600MHz 130W (88Y7354)
- Intel Xeon Processor E5-4603 4C 2.0GHz 10MB Cache 1066MHz 95W (88Y7446)
- Intel Xeon Processor E5-4650L 8C 2.6GHz 20MB Cache 1600MHz 115W (88Y7458)

Memory support

The following memory options are supported:

- 4 GB (2Gb, 1Rx4, 1.35V) PC3L-10600R ECC LP RDIMM (49Y1406)

- 4 GB (2Gb, 1Rx4, 1.5V) PC3-12800 DDR3-1600 LP RDIMM (49Y1559)
- 8 GB 2Rx4 2Gbit PC3L-10600R LP RDIMM 1.35V Capable (49Y1397)
- 8 GB (2Gb, 2Rx4,1.5V) PC3-12800 DDR3-1600 LP RDIMM (90Y3109)
- 16 GB (4Gb, 2Rx4,1.35V) PC3-10600 DDR3-1333 LP RDIMM (49Y1563)
- 16 GB (2Gb, 2Rx4,1.35V) (LR from 4Rx4) PC3L-10600 DDR3-1333 LP LR-DIMM (49Y1567)
- 16 GB (1x16GB, 2RX4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM (00D4968)
- 32 GB (1x32Gb, 4Rx4, 1.35V) PC 3L-10600 CL9 ECC DDR3 1333 MHz LP LR-DIMM (90Y3105)

Memory DIMMs should be plugged in order of size -- largest first, followed by the next size. When plug order moves to new DIMM numbers, start with the memory card with the smallest total amount.

- Example: Two CPUs, four memory cards, four 8 GB DIMMs, eight 4 GB DIMMs.
  - Card1 DIMMs 1 and 8 = 2 x 8 GB
  - Card7 DIMMs 1 and 8 = 2 x 8 GB
  - Card3 DIMMs 1 and 8 = 2 x 4 GB
  - Card5 DIMMs 1 and 8 = 2 x 4 GB
- When moving to next DIMM locations 3 and 6, start with the card with the least amount of memory.
  - Card3 DIMMs 3 and 6 = 2 x 4 GB
  - Card5 DIMMs 3 and 6 = 2 x 4 GB
- End result is four memory cards, each with 16 GB, balanced for the best performance

Note: Refer to details on the ServerProven Plan for memory supported in x3750 M4 at

http://www-03.ibm.com/servers/eserver/serverproven/compat/us/indexsp.html

PCIe adapter installations

The x3750 M4 servers contain PCIe architecture and five x8 5.0 Gb PCIe I/O sockets with an additional three x8 5.0 GbPCII/O sockets on the optional PCIe slot expansion riser.

Rack installations

x3750 M4 2U, rack-drawer models are designed to be installed in a 19-inch rack cabinet designed for 26-inch deep devices, such as the NetBAY42 ER, NetBAY42 SR, NetBAY25 SR, or NetBAY11.

If using a non-IBM rack, the cabinet must meet the EIA-310-D standards with a depth of at least 71.1 cm (28 in). Also, adequate space (approximately 5 cm (2 in) for the front bezel and 2.5 cm (1 in) for air flow) must be maintained from the slide assembly to the front door of the rack cabinet to allow sufficient space for the door to close and provide adequate air flow.

Powerconsiderations

These x3750 M4 models include two 1400-watt, voltage sensing, rear access, hot-swap power supplies in the main x3750 M4 chassis.

Cable orders

The 10/100/1000 Mbps full-duplex, Dual Ethernet PCIe controller is standard with the x3750 M4 servers. The RJ-45 connectors provide a 10BASE-T or 100/1000BASE-TX interface for connecting twisted-pair cable to the Ethernet network. Cabling is not included with the server. To connect the Ethernet controller to a repeater or switch,

use a UTP cable with RJ-45 connectors at both ends. For 100/1000 Mbps operation, Category 5 cabling must be used. For 10 Mbps operation, Category 3, or better, cabling must be used.

There are no additional cabling requirements, other than for system power, keyboard, mouse, and monitor connections.

Installability

The x3750 M4 server requires about 40 minutes for installation. Installation includes unpacking, setting up, and powering on the system. Additional time is required to install an operating system, additional adapters, or features.

Packaging

Product	Shipment group	Number of boxes
IBM System x3750 M4	System unit carton Contents: System unit Rack kits (two sets): Rails Cable management hardware	1
IBM System x3750 M4	Country kit carton Contents: Two 2.8m 220 V intra-rack cables Safety booklet CD-ROM Packages IBM Systems Director CD-ROM Packages Active Energy Manager On/off switch cover	1

The x3750 M4 systems are shipped as a single package. The country kit carton is contained inside the top portion of the system unit carton, while the rack components are contained in the system unit carton.

The *IBM System x3750 M4 Types 8722 and 8733 Installation and Service Guide,* in US English, is available from our website.

The *Warranty Information* publication will be available as a hardcopy publication at

http://www.ibm.com/systems/support

Related options

Processor upgrades

- Xeon processor
- Installation publications/warranty

Supplies

None

Security, auditability, and control

Security and auditability features include:

- Power-on and privileged access password functions provide controls of who has access to the data and server setup program on the server.

- A set unattended boot mode allows the system keyboard to be locked to all entries except the password and at the same time allows other computers on the network to access the system disk drive.
- A selectable boot sequence can be used to prevent unauthorized installation of software or removal of data from the diskette drive.
- These servers are Winbond Trusted Platform Module V1.2, Trusted Computing Group (TCG) compliant.

Limitations

The x3750 M4 servers have no security intrusion detection; therefore, they should be installed in a rack environment that provides security through lockable doors or other security measures. It is a customer's responsibility to ensure that the server is secure to protect sensitive data.

The system supports integrity measurements. The TPM is TCG V1.2-compliant, and is ready for use with software purchased from third-party TPM Ecosystem partners in compliance with the TPM V1.2 specification.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

Global Technology Services

Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings, for the efficient installation, implementation, and/or integration of this product.

Terms and conditions

IBM System x3750 M4

To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or IBM .

Warranty period

- Three years
- Optional features - One year

Note: For configurations that support the RAID Battery, the RAID battery will be warranted for one year effective on its "Date of Installation." All other product warranty terms for the machine remain unchanged.

An IBM part or feature installed during the initial installation of an IBM machine is subject to a full warranty effective on the date of installation of the machine. An IBM part or feature that replaces a previously installed part or feature assumes the remainder of the warranty period for the replaced part or feature. An IBM part or feature added to a machine without replacing a previously installed part or feature is subject to a full warranty effective on its date of installation. Unless specified otherwise, the warranty period, type of warranty service, and service level of a part or feature are the same as those for the machine in which it is installed.

The following have been designated as consumables or supply items and are, therefore, not covered by this warranty:

- ServeRAID SAS controller battery
- EMC filler
- Chassis Asm
- Fan Cage Asm
- Top Cover Asm

- USB/Video Bracket
- Misc Parts Kit
- Shipping Bracket
- Front Bezel
- 1.8-in. SSD Filler
- HDD Filler
- 4 Bay HS Backplane Filler
- PCI Card group filler
- EIA Flange Bracket
- Top cover
- Gen-III slide kit
- Gen-III 1U CMA kit
- Gen-III 2U CMA Kit
- DVD blank filler
- PSU filler
- CMA Assembly Kit
- CMA
- Remote battery tray
- Rail kit
- Cable management arm

Warranty service

If required, IBM provides repair or exchange service, depending on the type of warranty service specified below for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM . You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country- and location-specific information.

The type of service is Customer Replaceable Unit (for example, keyboard, mouse, speaker, memory, or hard disk drive) Service and On-site Service.

Customer Replaceable Unit (CRU) Service

IBM provides a replacement CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request. A CRU is designated as being either a Tier 1 (mandatory) or a Tier 2 (optional) CRU. Installation of Tier 1 CRUs, as specified in this announcement, is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation. You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service designated for your machine.

Based upon availability, a CRU will be shipped for next business day (NBD) delivery. IBM specifies in the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM . When return is required, return instructions and a container are shipped with the replacement CRU, and you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

The following parts have been designated as Tier 1 CRUs:

- Operator information panel
- PowerSupplies
- PDU power cord
- Fans
- Memory DIMMs
- Hard disk drives
- Ethernet adapter
- RAID cards
- SolidState Drives
- Cable, ServeRAID M5100PowerModule
- Cable, ServeRAID M5100 Battery
- Cable, SAS BP to BP, 130/155mm
- PowerInterposer Card
- PCIe riser asm
- Cable, DVD SATA
- Cable, Operator information panel
- DVD drive
- SFP optical module
- Cable, power, Fusion-IO card
- Adapter Cards
- RAID Battery (during battery warranty period)

On-site Service

At IBM's discretion you will receive CRU service or IBM or your reseller will repair the failing machine at your location and verify its operation. If required, On-site Repair is provided, 9 hours per day, Monday through Friday excluding holidays, NBD response. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose. On-site Service is not available in all countries, and some countries have kilometer or mileage limitations from an IBM service center. In those locations where On-site Service is not available, the normal in-country service delivery is used.

International Warranty Service

International Warranty Service (IWS) is available in selected countries or regions.

The warranty service type and the service level provided in the servicing country may be different from that provided in the country in which the machine was purchased.

Under IWS, warranty service will be provided with the prevailing warranty service type and service level available for the IWS-eligible machine type in the servicing country, and the warranty period observed will be that of the country in which the machine was purchased.

To determine the eligibility of your machine and to view a list of countries where service is available, visit

http://www-947.ibm.com/support/entry/portal/docdisplay?lndocid=GCOR-3FBJK2

For more information on IWS, refer to Services Announcement ZS01-0168, dated September 25, 2001 .

Licensing

Programs included with this product are licensed under the terms and conditions of the License Agreements that are shipped with the system.

Warranty service upgrades

IBM hourly service rate classification

Two

Field-installable features

Yes

Model conversions

No

Machine installation

Customer setup. Customers are responsible for installation according to the instructions IBM provides with the machine.

Licensed Machine Code

IBM Machine Code is licensed for use by a customer on the IBM machine for which it was provided by IBM under the terms and conditions of the IBM License Agreement for Machine Code, to enable the machine to function in accordance with its specifications, and only for the capacity authorized by IBM and acquired by the customer. You can obtain the agreement by contacting your IBM representative or visiting

http://www-304.ibm.com/systems/support/machine_warranties/machine_code.html

IBM may release changes to the Machine Code. IBM plans to make the Machine Code changes available for download from the IBM System x technical support website

http://www-304.ibm.com/systems/support/

If the machine does not function as warranted and your problem can be resolved through your application of downloadable Machine Code, you are responsible for downloading and installing these designated Machine Code changes as IBM specifies. If you would prefer, you may request IBM to install downloadable Machine Code changes; however, you may be charged for that service.

Pricing

For all local charges, contact your IBM representative.

ServicePac® service upgrades

The announced hardware products may also be eligible for ServicePac warranty upgrades. ServicePac provides a higher level of service to enhance the base IBM machine warranty and a selection of software support services.

ServicePacs can be purchased from your IBM Business Partner and are specific to the machines/products listed.

The upgrade level of service is dependent on country.

For a full list of ServicePac offerings and prices, refer to the IBM ServicePac Product Selector Tool

https://www-304.ibm.com/sales/gss/download/spst/servicepac/newGenerationXML.do

Announcement countries for ServicePac

Announcement is restricted to the following countries:

- Algeria
- Angola
- Austria
- Bahrain
- Belgium
- Botswana
- Bulgaria
- Croatia
- Czech Republic
- Denmark
- Egypt
- Estonia (1)
- Finland
- France (except overseas territories)
- Germany
- Greece
- Hungary
- Ireland
- Israel
- Italy
- Jordan
- Kazakhstan
- Kenya
- Kuwait
- Latvia (1)
- Lebanon
- Lithuania (1)
- Libya
- Luxembourg
- Mauritius
- Morocco
- Mozambique
- Netherlands
- Nigeria
- Norway
- Oman
- Pakistan
- Poland
- Portugal
- Qatar
- Romania
- Russia
- Saudi Arabia

- Serbia
- Slovakia
- Slovenia
- S. Africa
- Spain
- Sweden
- Switzerland
- Tanzania
- Tunisia
- Turkey
- UK (mainland only)
- Ukraine
- United Arab Emirates

(1) Order and registration via Finland

Maintenance

The products in this document are also covered by Maintenance Agreements and ServiceSuite® contracts.

Announcement countries

All European, Middle Eastern, and African countries.

Trademarks

IBM, Lotus Notes, System x, ServerProven, ServicePac and ServiceSuite are registered trademarks of IBM Corporation in the United States, other countries, or both.

Intel Xeon and Intel are trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Other company, product, and service names may be trademarks or service marks of others.

Terms of use

IBM products and services which are announced and available in your country can be ordered under the applicable standard agreements, terms, conditions, and prices in effect at the time. IBM reserves the right to modify or withdraw this announcement at any time without notice. This announcement is provided for your information only.Reference to other products in this announcement does not necessarily imply those products are announced, or intend to be announced, in your country.Additional terms of use are located at

http://www.ibm.com/legal/us/en/

For the most current information regarding IBM products, consult your IBM representative or reseller, or visit the IBM worldwide contacts page

http://www.ibm.com/planetwide/